

# IANA's role in managing the DNS

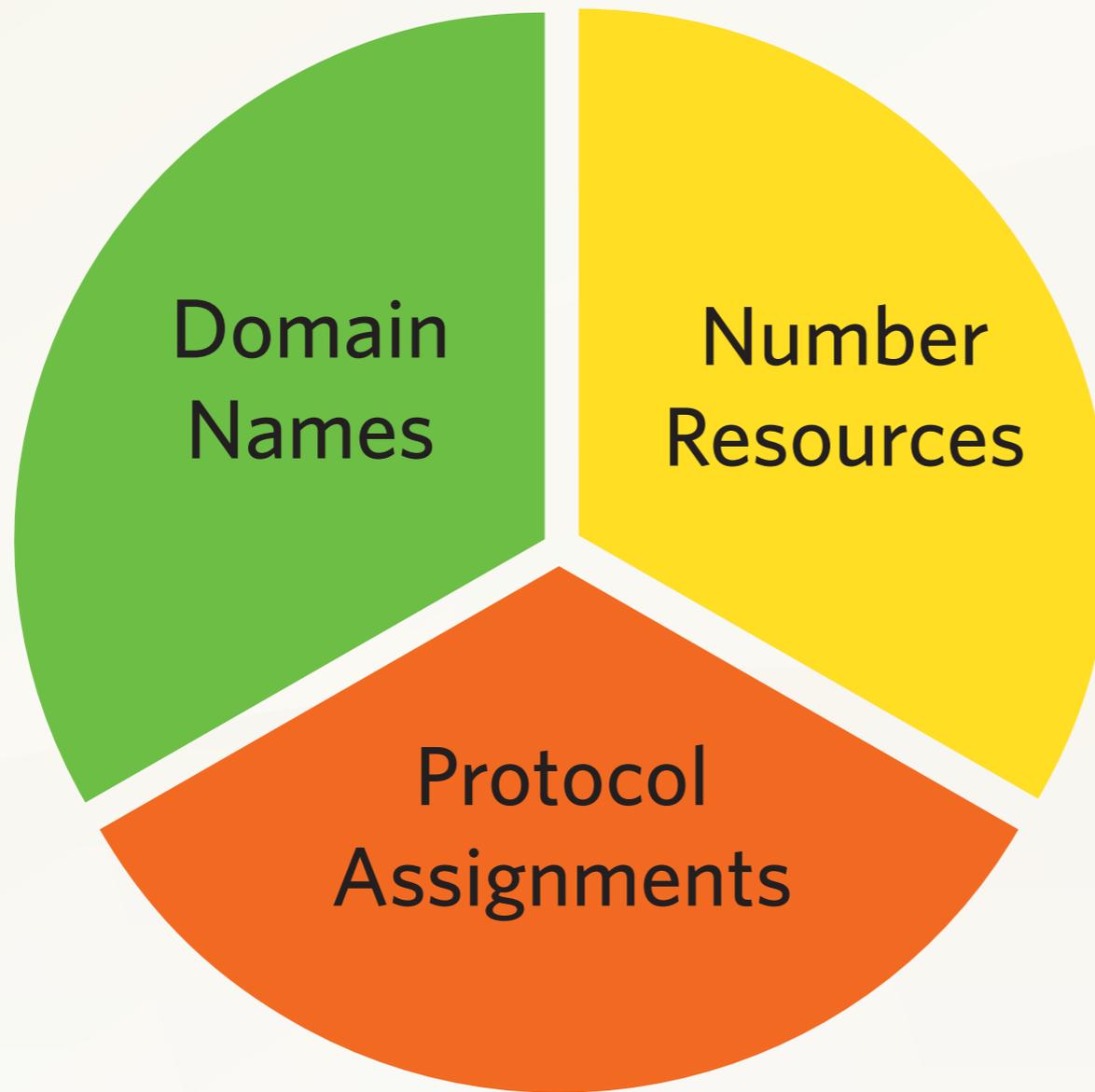
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# What is IANA?

- ▶ the “Internet Assigned Numbers Authority”
- ▶ Quite likely the oldest Internet institution
  - ▶ first documented in 1972
- ▶ Responsible for global coordination of the Internet’s unique names and numbers
- ▶ Since 1998, a service provided by ICANN
  - ▶ Previously operated in academia under US Government research contracts.
  - ▶ Internally within ICANN, a department

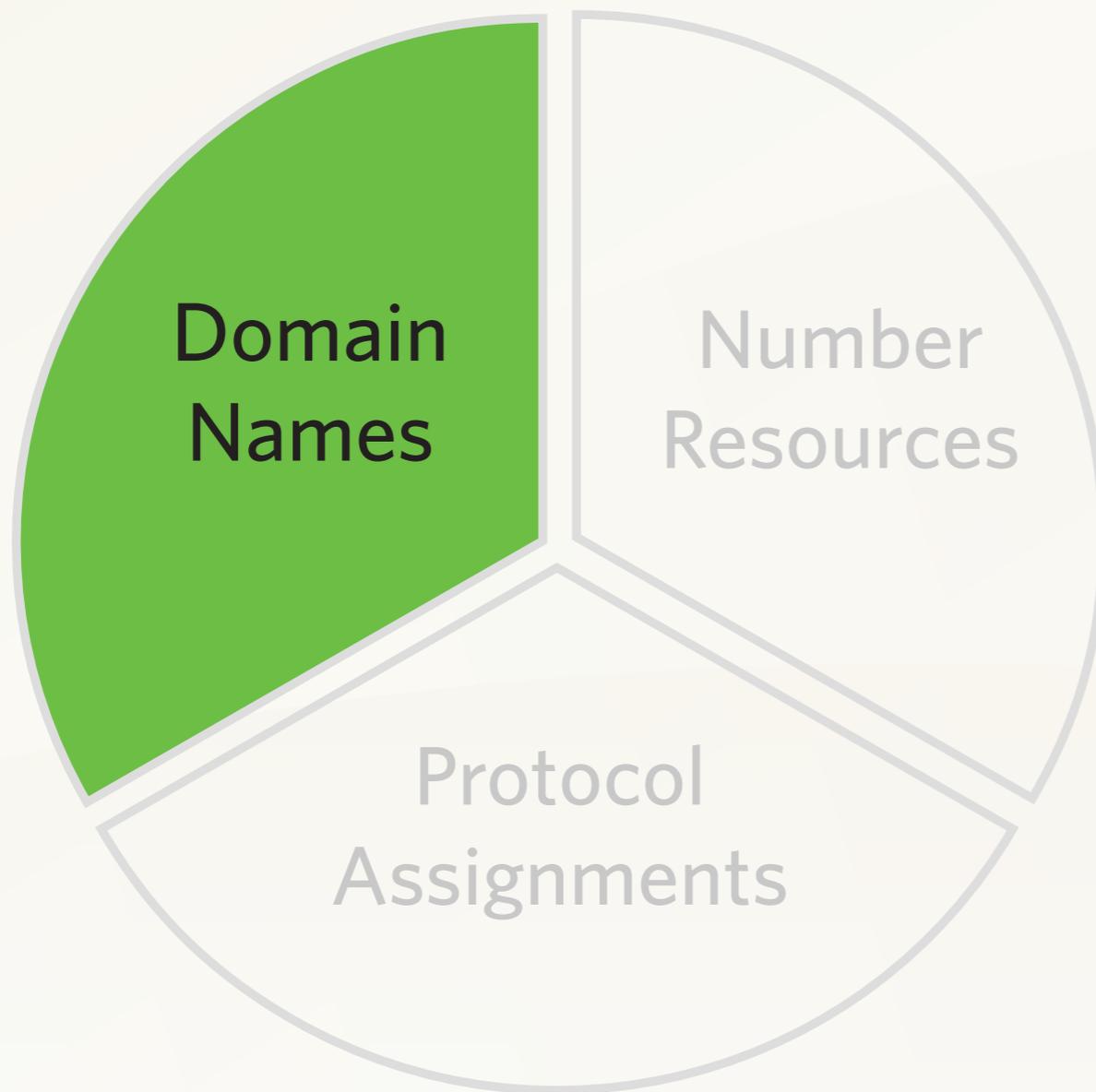


- IPv4 Addresses
- IPv6 Addresses
- AS Numbers

- Hundreds of other protocol systems that are non-hierarchical
- In liaison with IETF, IAB etc.

## IANA's key roles

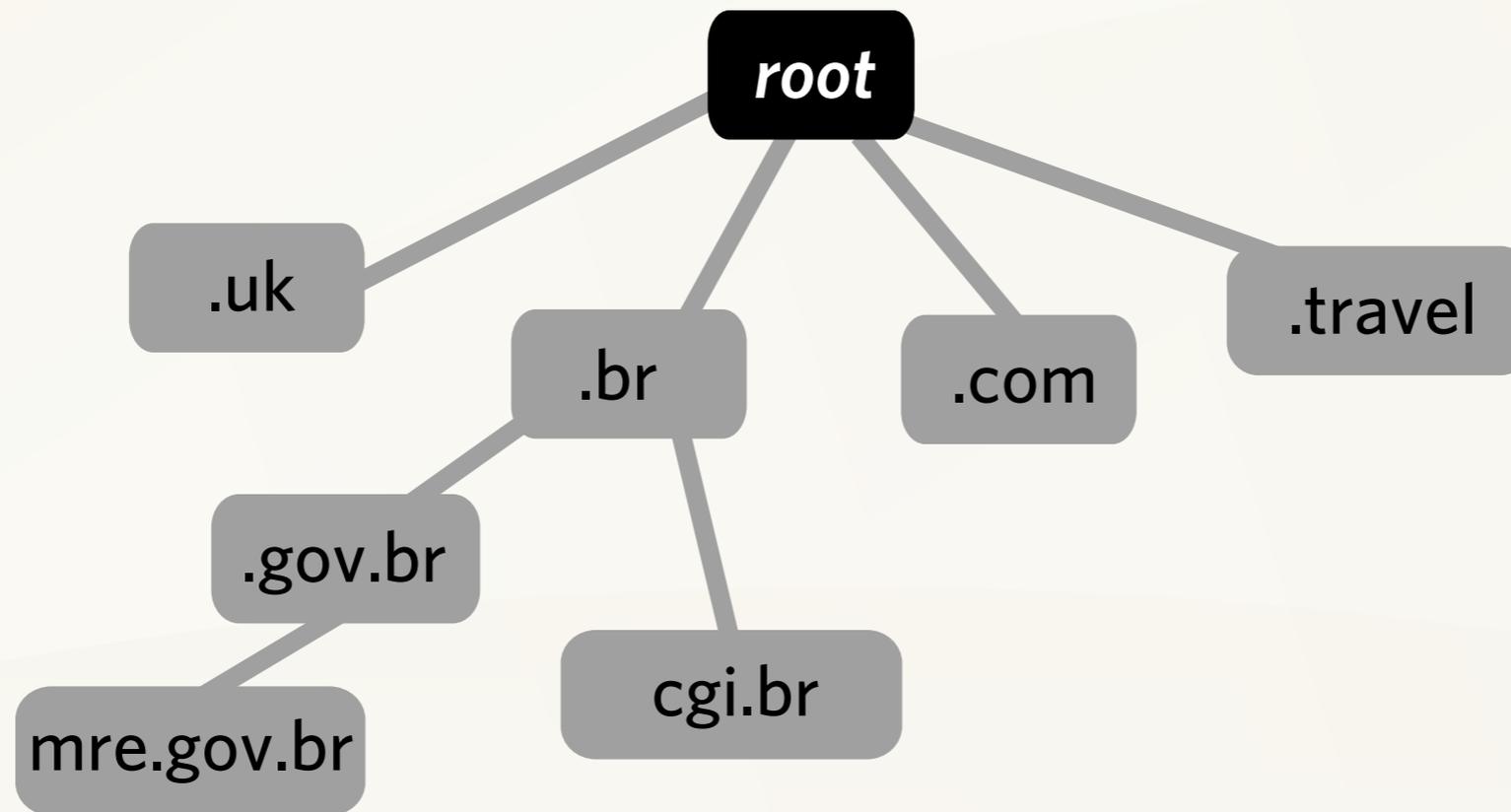
- ▶ Coordinating Internet identifiers that need to be globally unique



- **.INT**  
*Intergovernmental  
Treaty Organisations*
- **.ARPA**  
*Key internal  
technical systems*
- **DNS root zone**

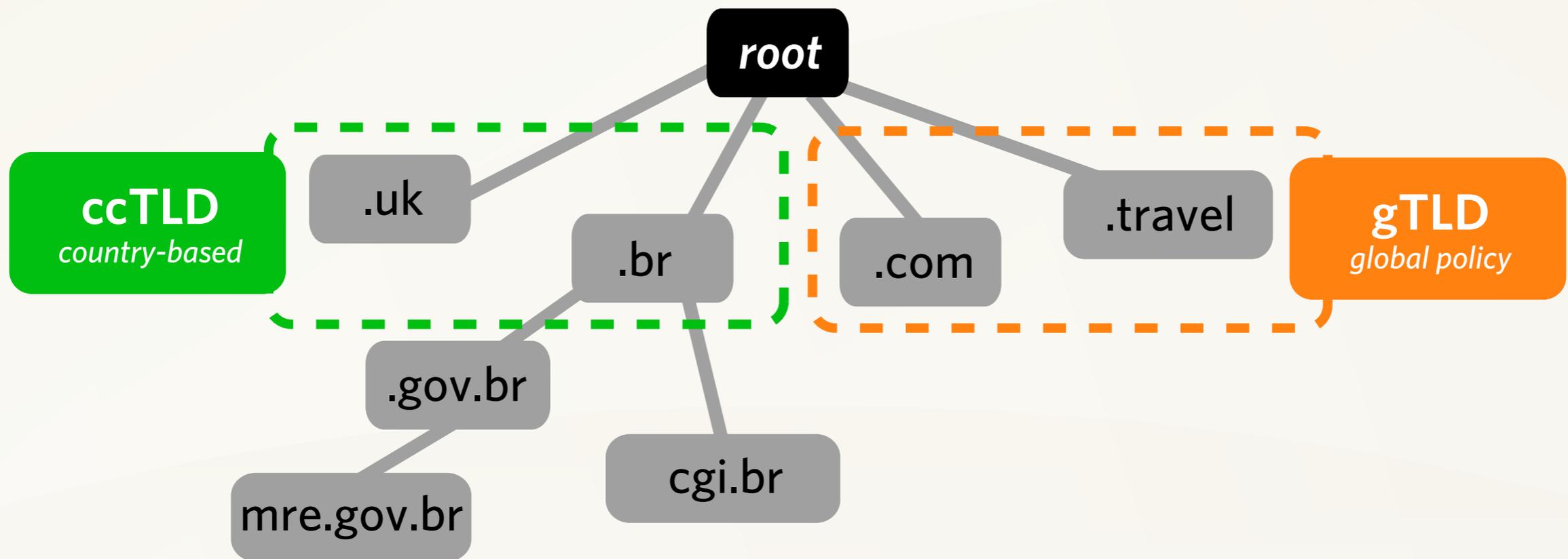
## IANA's key roles

- ▶ Domain name administration is a small, but important and highly visible, component.



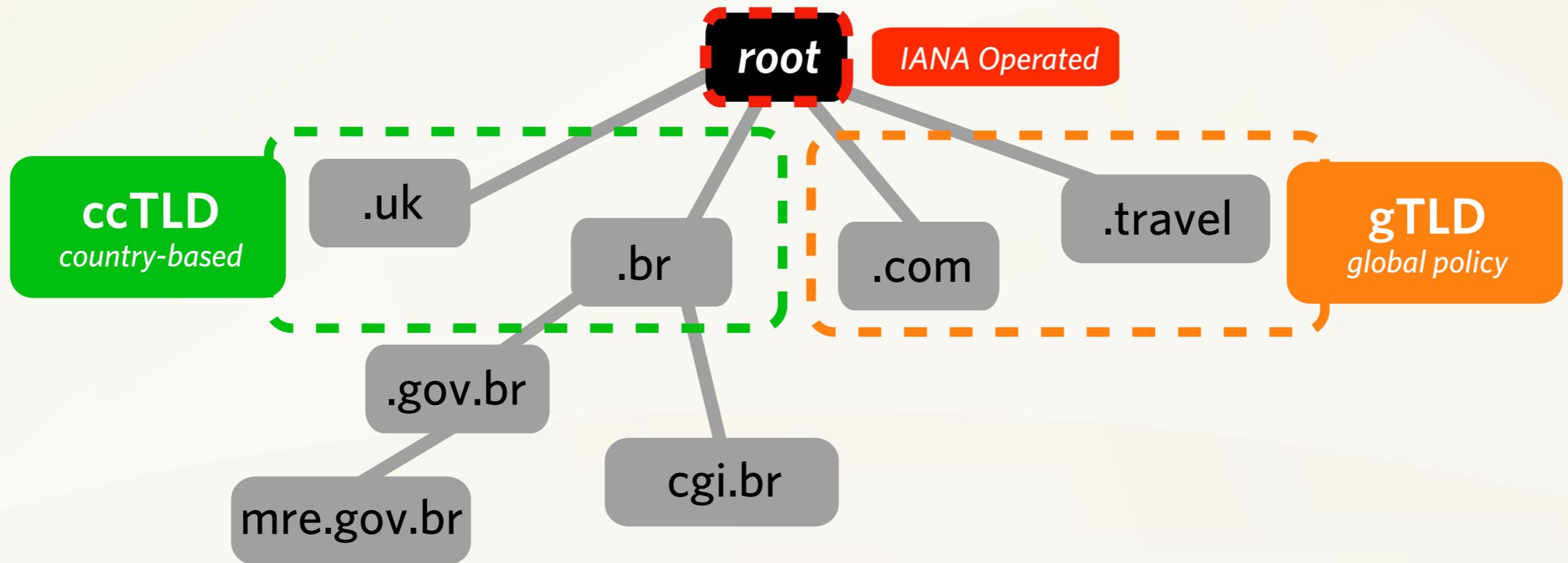
## DNS structure

- ▶ Delegations are made down a “tree”.
- ▶ *root* → *.br* → *.gov.br* → *mre.gov.br*



# DNS structure

- ▶ “top-level domains” can be divided into:
  - ▶ country-codes: local policy, local law, subsidiarity
  - ▶ global: worldwide use, ICANN policy



# DNS structure

- ▶ IANA operates the root
  - ▶ delegates operators of TLDs (incl. ccTLDs)

# Country-code top-level domains (ccTLDs)

- ▶ ISO 3166-1 standard nominates two-letter codes for countries and autonomous regions (as defined by UN)
- ▶ IANA will assign the operator of a ccTLD at the request of the local Internet community in a particular country.
  - ▶ initial request is a “delegation”, changing operators of an existing code is a “redelegation”.
- ▶ IANA doesn't take an ongoing role in operating the domain, simply appoints the operator. Local interests should decide how the domain is run within country.

# Key criteria for ccTLD operator

## 1. Operator must show operational and technical skills

Must be able to operate the TLD in an effective and proper manner. Meet certain testable technical criteria.

## 2. Operator must be in country

Allows the operation to be subject to local law.

## 3. Operator must treat LIC fairly and equitably

The operator, for example, can't discriminate within the local Internet community on who it may provide service for.

## 4. Operator must demonstrate community/government support.

Operator needs to show that it has reasonable support to operate the resource.

*Ability to meet these criteria is formally assessed in the event of a delegation or redelegation request.*

# Delegation Procedure

- ▶ IANA performs evaluation in consultation with:
  - ▶ requestor to understand situation, seek additional documentation
  - ▶ current operators (if they exist) to determine consent
  - ▶ local Internet actors to confirm assertions on LIC support
  - ▶ governments to identify support
  - ▶ ICANN staff who have insight into local situation
- ▶ If assessed to proceed, considered by ICANN board
  - ▶ Multi-stakeholder board from many nations
  - ▶ Focus is on answering two questions:
    1. Does the request reflect the in-country consensus?
    2. Does the application preserve the stability of the Internet?
- ▶ Upon approval, implemented normally

# What ccTLD operators do

- ▶ Operate the ccTLD with policy that is in the public interest of the territory concerned
- ▶ Operate a technically stable service
  - ▶ poor setup = unreliable domain service = “broken” Internet
  - ▶ damage of bad setup affects outside country as well!
- ▶ Coordinate with IANA
  - ▶ ensure effective communication of data
- ▶ Participate in ICANN, other fora, to develop global policy and share best practice

# Management tasks for IANA

- ▶ Essentially a technical maintenance function
  - ▶ Technical delegation details to be kept in the DNS root zone
  - ▶ Monitoring and coordination of effective function of DNS
  - ▶ Consultation and research on technical function
  - ▶ Provides neutral service to all TLD managers, independent of their direct involvement in ICANN
- ▶ Elements touch on non-technical concerns
  - ▶ Non-technical decisions are not taken by IANA!

# Future work for IANA

- ▶ Internationalisation of the DNS root zone

إختبار  
Arabic

آزمایشی  
Persian

测试 測試  
Chinese

.испытание  
Russian

.परीक्षा  
Hindi

.δοκιμή  
Greek

.테스트  
Korean

טעסט  
Yiddish

.テスト  
Japanese

.பரிட்சை  
Tamil

- ▶ Improved efficiencies in processing requests



# Summary

- ▶ ccTLDs are operated in the public interest, within countries, involving local Internet community and local government.
- ▶ IANA's role is ensuring it is operated by a responsible operator that the community agrees is appropriate.
- ▶ ccTLD operators and IANA community coordinate to ensure technical data is properly in sync.
- ▶ With respect to the root zone, IANA operates an essential technical service

# Thank you for your attention!

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